

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Pradip Mukerji, et al.

Serial No.: 10/054,534

Filed: January 22, 2002

For: DESATURASE GENES AND USES THEREOF

Attorney Docket No.: 6763.US.P1

Group Art Unit: 1636

Examiner: Daniel M. Sullivan

Certificate of Mailing under 37 CFR §1.8(a):

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*Kimberly A. Jorio 6-1-04*  
Kimberly A. Jorio

**REVISED INFORMATION DISCLOSURE STATEMENT SUBMITTED IN RESPONSE  
TO OFFICE ACTION OF DECEMBER 30, 2003**

The following information is submitted pursuant to 37 C.F.R. §1.97 and §1.98 in accordance with Applicants' duty of disclosure under 37 C.F.R. §1.56. This submission is not an admission that the documents cited herein are prior art as to the invention claimed. In accordance with 37 CFR §§1.97(g)-(h), the filing of this Revised Information Disclosure Statement shall not be construed to mean that a search has been made or that other material information as defined by 37 CFR §1.56(b) exists.

In response to the First Office Action dated December 30, 2003, Applicants submit herewith four amended PTO-1449 forms listing the references known to them. Applicants respectfully request that the Examiner (1) initial each reference listed on the enclosed amended PTO-1449 forms indicating that the Examiner has considered and made those references of record in this application and (2) return a copy of the initialed, amended PTO-1449 forms to Applicants. Copies of the references listed were previously submitted in the present application on January 7, 2003 and May 12, 2003.

This Revised Information Disclosure Statement is submitted after the first Office Action on the merits, but before the issuance of a final action or a notice of allowance. Authorization to charge Deposit Account No. 01-0025 in the amount necessary to cover the cost of this Revised Information Disclosure Statement under 37 C.F.R. 1.17(p) is provided in the Transmittal Letter, submitted herewith.

Respectfully submitted,  
Pradip Mukerji, et al.

*Cheryl L. Becker*  
Cheryl L. Becker  
Registration No. 35,441  
Attorney for Applicants

ABBOTT LABORATORIES  
Customer No.: 23492  
Telephone: (847) 935-1729  
Facsimile: (847) 938-2623

DATE: June 1, 2004

SHEET 1 of 2

## Form PTO - 1449 (Modified)

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (Modified) JUN 6 2004 PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 6763.US.P1	SERIAL NO. 10/054,534
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT P. Mukerji, et al.	
(Use several sheets if necessary)  (37 CFR 1.98 (b))		FILING DATE January 22, 2002	GROUP 1632

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	PATENT NUMBER	ISSUE DATE	PATENTEE	CLASS	SUB CLASS	FILING DATE
A1	5,447,974	08/22/1995	Hitz, et al.			
A2	5,552,306	09/03/1996	Thomas, et al.			
A3	5,912,120	06/15/1999	Goldstein, et al.			
A4	5,107,065	04/21/1992	Shewmaker, et al.			
A5	5,231,020	07/27/1993	Jorgensen, et al.			
A6	4,945,050	07/31/1990	Sanford, et al.			
A7	4,683,202	07/28/1987	Mullis			
A8	4,582,788	04/15/1986	Erlich			
A9	4,683,194	07/28/1987	Saiki, et al.			
A10	5,750,176	05/12/1998	Prieto, et al.			
A11	5,700,671	12/23/1997	Prieto, et al.			
A12	5,463,174	10/31/1995	Moloney, et al.			
A13	4,943,674	07/24/1990	Houck, et al.			
A14	5,106,739	04/21/1992	Comai, et al.			
A15	5,175,095	12/29/1992	Martineau, et al.			
A16	5,420,034	05/30/1995	Kridl, et al.			
A17	5,188,958	02/23/1993	Moloney, et al.			
A18	5,589,379	12/31/1996	Kridl, et al.			
A19	5,004,863	04/02/1991	Umbeck			
A20	5,159,135	10/27/1992	Umbeck			
A21	5,518,908	05/21/1996	Corbin, et al.			
A22	5,569,834	10/29/1996	Hinchee, et al.			
A23	5,416,011	05/16/1995	Hinchee, et al.			
A24	5,631,152	05/20/1997	Fry, et al.			
A25	4,826,877	05/02/1989	Stewart, et al.			
A26	4,666,701	05/19/1987	Horrobin, et al.			
A27	4,758,592	07/19/1988	Horrobin, et al.			
A28	5,116,871	05/26/1992	Horrobin, et al.			

## FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

	DOCUMENT NUMBER	PUBLIC-ATION	COUNTRY OR PATENT OFFICE	CLASS	SUB CLASS	TRANS-LATION
		DATE				YES NO
B1	WO 93/11245	06/10/1993	PCT			
B2	WO 94/11516	05/26/1994	PCT			
B3	WO 96/13591	05/09/1996	PCT			
B4	50424	09/18/1985	EPO			
B5	84796	05/12/1990	EPO			
B6	258017	04/16/1997	EPO			
B7	237362	10/21/1998	EPO			
B8	201184	12/16/1992	EPO			
B9	WO 95/24494	09/14/1995	PCT			

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(Form PTO-1449)

## Form PTO - 1449 (Modified)

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (Modified) PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO.	SERIAL NO.
		6763.US.P1 APPLICANT	10/054,534
INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (Use several sheets if necessary)  (37 CFR 1.98 (b))		FILING DATE	GROUP
		January 22, 2002	1632

## OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

C1	The Faseb Journal, Abstracts, Part I, Abstract 3093, p. A532, Experimental Biology 98, San Francisco, CA (4/18-22/1998)
C2	Altschul, et al., Nucleic Acids Research, Gapped Blast and PSI-Blast: A New Generation of Protein Database Search Programs, 25: 3389-3402 (1997)
C3	Okamuro & Goldberg, Biochemistry of Plants, Regulation of Plant Gene Expression: General Principles, 15:1-82 (1989)
C4	Turner & Foster, Molecular Biotechnology, The Potential Exploitation of Plant Viral Translational Enhancers in Biotechnology for Increased Gene Expression, 3:225 (1995)
C5	Ingelbrecht, et al., Plant Cell, Different 3' End Regions Strongly Influence the Level of Gene Expression in Plant Cells, 1:671-680 (1989)
C6	Klein, et al., Nature (London), High-Velocity Microprojectiles for Delivering Nucleic Acids Into Living Cells, 327:70-73 (1987)
C7	Ishida Y., et al., Nature Biotech, High Efficiency Transformation of Maize ( <i>Zea mays L.</i> ) Mediated by Agrobacterium <i>Tumefaciens</i> , 14:745-750 (1996)
C8	Mulles, et al., Cold Spring Harbor Symp. Quant. Biol., Specific Enzymatic Amplification of DNA In Vitro: The Polymerase Chain Reaction, 51:263-273 (1986)
C9	Jones, et al., EMBO J., High Level Expression of Introduced Chimaeric Genes in Regenerated Trasformed Plants, 4:2411-2418 (1985)
C10	DeAlmeida, et al. Mol. Gen. Genetics, Transgenic Expression of Two Marker Genes Under The Control of an Arabiodopsis rbcS Promoter: Sequences Encoding the Rubisco Transit Peptide Increase Expression Levels, 218:78-86 (1989)
C11	Schnieke, et al. Science, Human Factor IX Transgenic Sheep Produced by Transfer of Nuclei From Transfected Fetal Fibroblasts, 278:2130-2133 (1997)
C12	McCabe et al., BioTechnology, Stable Transformation of Soybean ( <i>Glycine Max</i> ) by Particle Acceleration, 6: 923 (1988)
C13	Christou, et al., Plant Physiol., Stable Transformation of Soybean Callus by DNA-Coated Gold Particles, 87:671-674 (1988)
C14	McKently et al., Plant Cell Rep., Agrobacterium-Mediated Transformation of Peanut ( <i>Arachis Hypogaea L.</i> ) Embryo Azes and the Development of Transgenic Plants, 14:699-703 (1995)
C15	Grant, et al. Plant Cell Rep., Transformation of Peas ( <i>Pisum Sativum L.</i> ) Using Immature Cotyledons, 15:254-258 (1995)
C16	Bytebler, et al., Proc Natl Acad Sci, T-DNA Organization in Tumor Cultures and Transgenic Plants of the Monocotyledon Asparagus <i>Officinalis</i> , (USA) 84:5354 (1987)
C17	Wan & Lemaux, Plant Physiol., Germination of large Numbers of Independently Transformed Fertile Barley Plants, 10:37 (1994)
C18	Rhodes, et al., Science, Genetically Transformed Maize Plants from Protoplasts, 240:204 (1988)
C19	Gordon-Kamm, et al., Plant Cell, Transformation of Maize Cells and Regeneration of Fertile Transgenic Plants, 2:603-618 (1990)
C20	Fromm, et al., BioTechnology, Inheritance and Expression of Chimeric Genes in the Progeny of Transgenic Maize Plants, 8:833 (1990)
C21	Koziel, et al., BioTechnology, Field Performance of Elite Transgenic Maize Plants Expressing an Insecticidal Protein Derived from <i>Bacillus Thuringiensis</i> , 11:194 (1993)
C22	Armstrong, et al. Crop Science, Cell Biology & Molecular Genetics, 35:550-557 (1995)
C23	Somers, et al., BioTechnology, Fertile, Transgenic Oat Plants, 10:15 89 (1992)
C24	Horn, et al., Plant Cell Rep., Transgenic Plants of Orchardgrass ( <i>Dactylis Glomerata L.</i> ) From Protoplasts, 7:469 (1988)
C25	Park, et al., Plant Mol. Biol., T-DNA Integration Into Genomic DNA of Rice Following Agrobacterium Inoculation of Isolated Shoot Apices, 32:1135-1148 (1996)

## Form PTO - 1449 (Modified)

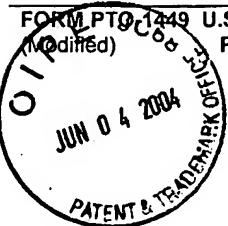
FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (Modified) PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO.	SERIAL NO.
		6763.US.P1 APPLICANT	10/054,534
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		P. Mukerji, et al. FILING DATE	GROUP
(Use several sheets if necessary)  (37 CFR 1.98 (b))		January 22, 2002	1632

C26	Abnedina, et al., <u>Aust. J. Plant Physiol.</u> , An Efficient Transformation System for the Australian Rice Cultivar, Jarrah, 24:133-141 (1997)
C27	Zhang & Wu, <u>Theor. Appl. Genet.</u> , Efficient Regeneration of Transgenic Plants from Rice Protoplasts and Correctly Regulated Expression of the Foreign Gene in the Plants, 76:835 (1988)
C28	Baltraw & Hall, <u>Plant Sci.</u> , Expression of a Chimeric Neomycin Phosphotransferase II Gene in First and Second Generation Transgenic Rice Plants, 86:191-202 (1992)
C29	Christou, et al., <u>Biol Technology</u> , Production of Transgenic Rice ( <i>Oryza Sativa L.</i> ) Plants From Agronomically Important Indica and Japonica Varieties Via Electric Discharge Particle Acceleration of Exogenous DNA Into Immature Zygotic Embryos, 9:957 (1991)
C30	De La Pena, et al., <u>Nature</u> , Transgenic Rye Plants Obtained by Injecting DNA Into Young Floral Tillers, 325:274 (1987)
C31	Bower & Birch, <u>Plant J.</u> , Transgenic Sugarcane Plants Via Microprojectile Bombardment, 2:409 (1992)
C32	Wang, et al. <u>Biol Technology</u> , Transgenic Plants of Tall Fescue ( <i>Festuca Acrundinacea Schreb.</i> ) Obtained by Direct Gene Transfer to Protoplasts, 10:691 (1992)
C33	Vasil, et al. <u>Biol Technology</u> , Herbicide Resistant Fertile Transgenic Wheat Plants Obtained by Microprojectile Bombardment of Regenerable Embryogenic Callus, 10:667 (1992)
C34	Marcotte, et al., <u>Nature</u> , Regulation of a Wheat Promoter by Abscisic Acid in Rice Protoplasts, 335:454-457 (1988)
C35	McCarty, et al., <u>Plant Cell</u> , Molecular Analysis of Viviparous-1: An Abscisic Acid-Sensitive Mutant of Maize, 1:523-532 (1989)
C36	McCarty, et al., <u>Cell</u> , The Viviparous-1 Developmental Gene of Maize Encodes a Novel Transcriptional Activator, 66:895-905 (1991)
C37	Hattori, et al., <u>Genes Dev.</u> , The Viviparous-1 Gene and Abscisic Acid Activate the C1 Regulatory Gene for Anthocyanin Biosynthesis During Seed Maturation in Maize, 6:609-618 (1992)
C38	Goff, et al., <u>EMBO J.</u> , Transactivation of Anthocyanin Biosynthetic Genes Following Transfer of B Regulatory Genes into Maize Tissues, 9:2517-2522 (1990)
C39	Horrobin, et al., <u>Am. J. Clin. Nutr.</u> , Fatty Acid Metabolism in Health and Disease: The Role of Δ-6-Desaturase, 57:7325-7345
C40	Brenner, et al., <u>Adv. Exp. Med. Biol.</u> , Function and Biosynthesis of Lipids, 83:85-101 (1976)
C41	Hoge, et al., <u>Exp. Mycology</u> , Absence of Differences in Polysomal RNAs From Vegetative Monokaryotic and Dikaryotic Cells of the Fungus <i>Schizophyllum Commune</i> , 6:225-232 (1982)
C42	Okuley, et al., <u>The Plant Cell</u> , <i>Arabidopsis FAD2</i> Gene Encodes the Enzyme That is Essential for Polyunsaturated Lipid Synthesis, 6:147-158 (1994)

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## U.S. PATENT DOCUMENTS

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A1	5,972,664 A	10/26/1999	Knutzon, et al.			

## FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

		DOCUMENT NUMBER	PUBLIC-ATION DATE	COUNTRY OR PATENT OFFICE		SUB CLASS	TRANSLATION YES NO
B1	WO 93/06712 A	04/15/93	PCT				
B2	WO 00/20603 A	04/13/00	PCT				
B3	WO 02/26946	04/04/02	PCT				
B4	WO 99/61602 A	12/02/99	PCT				
B5	1035207 A	09/13/00	EPO				
B6	WO 00/0075341	12/14/00	PCT				

## OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

C1	Qiu, Xiao, et al., "Identification of a DELTA4 Fatty Acid Desaturase from Thraustochytrium sp. Involved in the Biosynthesis of Docosahexanoic Acid by Heterologous Expression in <i>Saccharomyces Cerevisiae</i> and <i>Brassica Juncea</i> ," <i>Journal of Biological Chemistry</i> , Vol. 276, No. 34, (08/24/01) pages 31561-31566
C2	Saito, Tamao and Ochiai, Hiroshi, "Identification of DELTA5-Fatty Acid Desaturase from the Cellular Slime Mold <i>Dictyostelium Discoideum</i> ," <i>Eur. J. Biochem.</i> , Vol. 265, (1999), pages 809-814
C3	Leonard, Amanda E., et al., "cDNA Cloning and Characterization of Human DELTA5-Desaturase Involved in the Biosynthesis of Arachidonic Acid," <i>Biochem J.</i> , Vol. 347, (2000), pages 719-724
C4	Cho, Hyekyung P., et al., "Cloning, Expression, and Fatty Acid Regulations of the Human DELTA-5 Desaturase," <i>The Journal of Biological Chemistry</i> , Vol. 274, No. 52, (12/24/99) pages 37335-37339
C5	Sakuradani, Eiji, et al., "DELTA6-Fatty Acid Desaturase from and Arachidonic Acid-Producing Mortierella Fungus Gene Cloning and its Heterologous Expression in a Fungus, <i>Aspergillus</i> ," <i>GENE: An International Journal on Genes and Genomes</i> , Vol. 238, No. 2, (1999), pages 445-453
C6	Huang, Yung-Sheng, et al., "Cloning of DELTA12- and DELTA6-Desaturases from Mortierella Alpina and Recombinant Production of GAMMA-Linolenic Acid in <i>Saccharomyces Cerevisiae</i> ," <i>Lipids</i> , Vol. 34, No. 7, (07/99), pages 649-659
C7	Alonso, D. Lopez, et al., "Plants as 'Chemical Factories' for the Production of Polyunsaturated Fatty Acids," <i>Biotechnology Advances</i> , Vol. 18, (2000), pages 481-497

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